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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,477	07/29/2003	Takahiro Aoki	1614.1351	4692
21171	7590	05/01/2007	EXAMINER	
STAAS & HALSEY LLP			LIEW, ALEX KOK SOON	
SUITE 700			ART UNIT	
1201 NEW YORK AVENUE, N.W.			PAPER NUMBER	
WASHINGTON, DC 20005			2624	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/628,477	Applicant(s) AOKI ET AL.	
	Examiner Alex Liew	Art Unit 2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2624

1. The amendment filed on April 2, 2007 is entered and made of record.
2. The arguments presented by the applicant were found not persuasive.

### **Response to Applicant's Arguments**

The applicant argues Pavidis (US pat no 6,370,260) fails to disclose 'picking up the image of the object positioned in front of the background using wavelength in the visible light region and picking up the image of the object positioned in front of the background using wavelengths in the infrared region' and 'forming at least the surface of the background formed by the organic dye.'

The examiner will explain again the Pavidis reference. Pavidis discloses a first image pickup step to pick up an image of an object positioned in front of a background using wavelengths in a first light spectrum, which is discussed on column 4 lines 16 – 19, where camera 11 of figure 1 uses near-infrared spectrum at the lower band range from 0.8 to 1.4 microns and utilizing the camera as should be use as an image intensifier, a second image pickup step to pick up an image of the object positioned in front of the background using wavelengths in an infrared region, which is discussed on column 4 lines 20 – 24, where the camera 12 collects light emission from 1.4 to 2.2 microns, being near-infrared, and an extracting step to extract only the object based on the images picked up by the first and second image pickup steps, shown in figure 1 – 17, 18, 19' and 20', where the image in 19 is a binary image with extracted image 13'.

Pavidis uses segmentation techniques by distinguishing the skin area of the of the face from the background area, as shown in column 4 lines 35 – 46, but does not use

Art Unit: 2624

organic dye to distinguish the background from the foreground. Before explaining the O'Meara (US pat no 3,544,771) reference, the examiner would like to address another point made by the applicant, where the applicant argues 'It should also be noted that even an ink which appears to be black in the visible light region may appear invisible in the infrared region, and the ink in O'Meara cannot be simply applied to the image pickup using the wavelengths in the infrared region' O'Meara does use infrared radiation to detect the plurality of sections in the image by coating the regions using different levels of magnetic material coating, shown in column 4 lines 62 – 75.

The different level of coating give a plurality of reflected light, which distinguish the different regions of image, background area 14 (background area), information area 16 (is also read as the background ground area) and character area 18 (object area), where the coated areas includes ink or dye, shown in column 3 lines 26 – 28. O'Meara also uses visible light to detect the different regions of the image areas, shown on column 3 lines 41 – 45. Utilizing the lamp in O'Meara to replace the infrared illuminator in Pavidis, figure 1 – 14, and utilizing the coating and reflectance techniques of O'Meara to separate the object and background region, the combination of Pavidis and O'Meara disclose the claimed invention of claim 1.

#### **DETAILED ACTION**

##### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2624

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Pavidis (US pat no 6,370,260) in view of O'Meara (US pat no 3,544,771).

With regards to claim 1, Pavidis discloses an image extraction method comprising

- a first image pickup step to pick up an image of an object positioned in front of a background using wavelengths in a first light spectrum (see column 4 lines 16 – 19, where camera 11 of figure 1 uses near-infrared spectrum at the lower band range from 0.8 to 1.4 microns using the camera as should use as an image intensifier),
- a second image pickup step to pick up an image of the object positioned in front of the background using wavelengths in an infrared region (see column 4 lines 20 – 24, where the camera 12 collects light emission from 1.4 to 2.2 microns, which is near infrared) and
- an extracting step to extract only the object based on the images picked up by the first and second image pickup steps (see fig 1 – 17, 18, 19' and 20' – the image in 19 is a binary image with extracted image 13').

Pavidis uses segmentation techniques by distinguishing the skin area of the of the face from the background area, as shown in column 4 lines 35 – 46, but does not use organic dye to distinguish the background from the foreground

Art Unit: 2624

O'Meara discloses infrared radiation to detect the plurality of sections in the image by coating the regions using different levels of magnetic material coating, shown in column 4 lines 62 – 75. The different level of coating give a plurality of reflected light, which distinguish the different regions of image, background area 14 (background area), information area 16 (is also read as the background ground area) and character area 18 (object area), where the coated areas includes ink or dye, shown in column 3 lines 26 – 28. O'Meara also uses visible light to detect the different regions of the image areas, shown on column 3 lines 41 – 45. Utilizing the lamp in O'Meara to replace the infrared illuminator in Pavidis, figure 1 – 14, and utilizing the coating and reflectance techniques of O'Meara to separate the object and background region, the combination of Pavidis and O'Meara disclose the claimed invention of claim 1.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include a surface of the background is formed by a dye or any form of dye is because the energy in the form of electromagnetic radiation such as light is direct to the background dye and object will produce distinguishable series of pulse signal showing the location of object and the background area, so one would be able to easily locate the object (see col. 3 lines 31 – 40).

Pavidis and O'Meara are combinable because both references teach extraction of the object from background.

With regards to claim 2, Pavidis discloses an image extraction method as claimed in claim 1, wherein said extracting step extracts the object from the image picked up by the first image pickup step depending on color (see col. 4 lines 20 – 24 and fig 1 – 12

Art Unit: 2624

and 17 – the image pick up by camera 12 is use to determine the location of the object – head through color of skin), and extracts the object from the image picked up by the second image pickup step depending on luminance (see col. 4 lines 16 – 19 and fig 1 – 11 – the imager at the lower band is an image intensifier).

With regards to claim 3, Pavidis discloses all of the claim elements / features as discussed above in rejection for claim 1 and incorporated herein by reference, but fails to disclose dye has a color selected from a group consisting of blue-green color, gold color and silver color. O'Meara suggest selecting the background color as gray and the color of the object as black. Selecting dye color from group of consisting of blue-green color, gold color and silver color is a matter of choice. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include Selecting dye color from group of consisting of blue-green color, gold color and silver color is a matter of choice because the energy in the form of electromagnetic radiation such as light is direct to the background dye and object will produce distinguishable series of pulse signal showing the location of object and the background area, so one would be able to easily locate the object.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pavidis ('260) in view of O'Meara ('771) as applied to claim 1 further in view of Gaynor (US pat no 3,434,835).

Art Unit: 2624

Pavidis discloses all of the claim elements / features as discussed above in rejection for claim 1 and incorporated herein by reference, but fails to disclose the organic dye is selected from a group consisting of cyanine organic dyes, phthalocyanine organic dyes, and azo organic dyes. Gaynor discloses a method of extraction method as claimed in claim 1, wherein the organic dye is selected from a group consisting of cyanine organic dyes, phthalocyanine organic dyes, and azo organic dyes (see col. 4 lines 20 – 30). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include organic dye is selected from a group consisting of cyanine organic dyes, phthalocyanine organic dyes, and azo organic dyes because to allow the dye to with stand light radiation to prevent the dye from coming off from the background image, so the dye in the background can last longer.

4. Claims 5 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pavidis ('260) in view of Okazaki (US pat no 6,873,713) and O'Meara ('771).

With regards to claim 5, see the rationale and rejection for claim 1. In addition, Okazaki discloses a matching section to compare the image extracted by the extracting section and registered object images and to output a result of comparison as an authentication result (see col. 3 lines 19 – 33 – a plurality of images are taken from different views, the first image taken is read as the image taken from first imager and second image taken is read as the image taken from second imager – the average brightness is compared between the first, second and to the registered image). It would have been obvious to



Art Unit: 2624

one having ordinary skill in the art at the time of the invention was made to include a matching section because to identify the individual to prevent tress passers from entering any secure facility to improve security.

With regards to claim 6, see the rationale and rejection for claim 2.

With regards to claim 7, see the rationale for claim 5.

With regards to claim 8, see the rationale and rejection for claim 3.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pavidis ('260), Okazaki ('713) and O'Meara ('771) as applied to claim 5 further in view of Gaynor (US pat no 3,434,835).

With regards to claim 9, see the rationale and rejection for claim 4.

### **Conclusion**

**This action is made final.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shorten statutory period for reply to this final action is set to expire three months from the mailing date of this action. In the event a first reply is filed within two months of the mailing date of this final action and the advisory action is not mailed until

Art Unit: 2624

after the end of the three-month shorten statutory period, then the shorten statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however will the statutory period for reply expire later than six months from the mailing date of the final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Liew whose telephone number is (571)272-8623. The examiner can normally be reached on 9:30AM - 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2624

Alex Liew  
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4/20/07



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